

PASTURES FOR GOATS AND SHEEP

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Introduction and Characteristics of goats and sheep

Pasture for sheep is not that different than that for cattle but pasture for goats is very different. Sheep are grazers like cattle whereas goats are browsers like deer. Even though grass and clover are not a goats preference if all of the forage present is grass and clover goats will eat it. Due to goats and sheep being more prey animals than cattle they don't like to wade off into tall vegetation, also it takes more energy for them to move through tall growth. Many plants that we traditionally consider weeds become desirable forbs when goats or sheep are introduced to the pasture. Some weeds that neither goats nor sheep prefer are perilla mint, wingstem and cocklebur. Goat and sheep forage preference are quite different so I have separated them in the following narrative. Forage species that you would typically plant in a pasture are similar for goats and sheep. The following are cool season forages that you might plant for goats and sheep: tall fescue (Novel or Select low endophyte), orchardgrass, prairie brome grass (persister), white and red clover, hairy vetch, alfalfa, winter annuals, brassicas and chicory. Warm season forages that you might plant include: native grasses other than switchgrass however these tall uprights would be better for goats than sheep due to their grazing habit. Bermudagrass is typically not planted for goats but improved bermudagrass could be planted for sheep but would be best with intermediate white clover (durana, patriot, or resolute) interseeded. Goats and sheep both perform excellent on warm season annuals like: crabgrass, sudangrass, pearl millet, smooth amaranths, cowpeas, and soybeans. Although regulations prevent the seeding of johnsongrass it is preferred forage of goats, sheep and cattle.

Forages with Natural Deworming Properties

Plants that have tannins or other natural deworming properties include lespedezas. Sericea is the best lespedeza for deworming although annual lespedeza also has some deworming properties. Goats eat sericea better than sheep and cattle but all species will consume it in hay due to some of the tannins dissipating during the drying process but it still has deworming characteristics in hay. AU-Grazer is the longest lived sericea available. Other species that have deworming properties include: chicory, arrowleaf clover and berseem clover. Some species that have deworming properties but you would not plant are crownvetch, multiflora rose, autumn olive, mulberry and mimosa.

Nutritional Requirements

The order of nutritional requirements by species from most nutritionally needy to least is: goats, sheep and then cattle so if someone was doing leader follower grazing goats would go first then sheep then cattle. However goats are the most apt at forage selection so they can select the highest quality forage easier than sheep and much easier than cattle. Copper is very toxic to wool sheep it is known that hair sheep are more tolerant of copper in their diet but the specific tolerance of copper for hair sheep is not known. Goats are similar to cattle in copper requirement.

Individual goat and sheep preferences can vary like all animals due to previous experience and forage species availability.

Percent of Grasses, Broadleaves and Browse consumed by different animal species if a varied forage diet is presented

Diet Preference Animal Species	Type of Diet		
	Grasses	Broadleaf weeds and legumes	Browse ¹
Cattle	65 – 75	20 – 30	5 – 10
Horses	70 – 80	15 – 25	0 – 5
Sheep	45 – 55	30 – 40	10 - 20
Goats	20 – 30	10 – 30	40 – 60
White-tail deer	10 – 30	30 – 50	30 – 50
Elk, red, and fallow deer	30 – 60	40 – 50	10 - 30

¹Shrubs or trees

SOURCE: D. Forbes and G.W. Evers, Texas A&M Univ.; D.I. Bransby, Auburn Univ.; M.A. McCann, Virginia Tech Univ.; and W>R> Getz, Fort Valley State Univ. in Southern Forages 3rd Edition.

Internal Parasites, Foot Problems and Predator Control

Common characteristics between sheep and goats are they are both prone to problems with internal parasites, foot problems and vulnerability to predators. Goats and sheep share common internal parasites but cattle are prone to different species of internal parasites therefore cattle serve as vacuums removing deadly internal parasites of goats and sheep. When goats and sheep are forced to graze below 5" they are most prone to internal parasites. Foot rot and foot scald are both common problems of sheep

and goats. Foot rot is the most serious issue and I encourage you to cull animals with foot rot because it will likely be a reoccurring issue. Foot scald is more related to wet weather and thick wet forage and is not near as serious as foot rot. Predator control is needed for both goats and sheep: most people agree the livestock guardian dogs are the best with a ratio somewhere around 1 dog per 50 ewes and a minimum of two dogs, donkeys and llamas are also used for livestock protection and typically only one donkey and one llama per group is recommended.

Goat Forage Preference

Goats being natural browsers they prefer to keep their heads high. Goats are more prone to internal parasites than sheep however; through selection and culling goats can be resilient and tolerant of internal parasites. Although goats prefer browse in a pasture woody browse plants are typically not planted so species listed in the introduction are planted. The animal unit equivalent for goats is about 6:1 but will vary. Goats in general do not prefer perennial grasses but will consume some of them, clovers are also not preferred but they will consume some however the value of perennial grass and clovers are the stability and benchmark of a pasture with legumes providing nitrogen for the forage species mix. Maturity of forage also influences goat's preference for different forages. Some of the forbs goats typically have a preference for are: brambles, common and giant ragweed, honey suckles, ironweed, lambsquarter, multiflora rose, and privet. Goats will stand on their buddies back to reach higher forage and even go bipedal consuming forage as high as five foot. Oddly goats will avoid some forages like burdock till it goes to seed then they will consume the leaves. My theory is that some chemical anti-quality is moving from the leaves to the seed then goats consume the leaf but not the seed. Burdock would still be considered a weed due to the nature of its seed and the short window of forage availability. In general it is still best to keep forage in a vegetative state for highest quality.

Chemical composition of various plants browsed by goats (%)

Browse type	Crude protein	Neutral detergent fiber	Calcium	Phosphorous
<i>Multiflora rose</i>	18.2	34.5	0.99	0.32
<i>Black locust</i>	23.0	44.0	1.26	0.21
<i>Honeysuckle</i>	16.0	34.5	1.21	0.30
<i>Brambles</i>	17.1	24.5	0.23	0.84
<i>Privet</i>	20.0	26.8	0.89	0.34
<i>Green briar</i>	16.1	39.5	0.60	0.18
<i>Trumpet creeper</i>	16.7	43.1	0.42	0.22

Note: It is important to have a good free choice mineral available at all times but particularly when browsing briars since the calcium phosphorous ratio is inverse of what is typically desirable. You would typically not plant these species but if they are present they serve as forage for goats.

Sheep Forage Preference

Sheep are almost like little cows, I would never say that about a goat. Sheep love white clover and vegetative grass they also like buttercup very well this would please any cattleman. Sheep eat more forbs than browse but will consume about twice the amount of browse that cattle do. The animal unit equivalent for sheep is about 5:1 but will vary according to the size of the sheep.

Multi-species grazing of Cattle, Sheep and Goats

Cattle, sheep and goats can all be grazed together or in a leader follower fashion as mentioned in the introduction. If a high copper mineral is desired for the cattle it can be provided in a cut out barrel hung high so the sheep will not be able to reach it. Grazing multi-species will improve utilization of vegetation but will not control all weeds. When grazing multi-species one to two goats can be stocked for every cow without impacting the grazing of the cow. Half to one ewe can be stocked for every cow without impacting the cows grazing. In fact cattle forage will likely improve due to control of plants that are undesirable to the cow. It is estimated that overall stocking rate for multi-species can be increased as much as 25%.